



U.S. Department of Justice
Civil Rights Division

168-9-0/666818

Special Litigation Section - PHB
950 Pennsylvania Avenue, NW
Washington, DC 20530

FILED
U.S. DISTRICT COURT
EASTERN DISTRICT ARKANSAS

SEP 27 2019

July 22, 2019

JAMES W. MCCORMACK, CLERK
By: *[Signature]*
DEP CLERK

5:19-cv-293

Jack Greene
P.O. Box 400
Grady, AK 71644

Dear Mr. Greene:

Thank you for your letter. The Special Litigation Section relies on information from community members to identify civil rights violations. Each week, we receive hundreds of reports of potential violations. We collect and analyze this information to help us select cases, and we may also use this information as evidence in an existing case. We will review your letter to decide whether it is necessary to contact you for additional information. We do not have the resources to follow-up on every letter.

The Special Litigation Section is one of several Sections in the Civil Rights Division. We work to protect civil rights in four areas: 1) the rights of people in state or local institutions, including: jails, prisons, juvenile detention facilities, and health care facilities for persons with disabilities (including whether persons in health care facilities should be getting services in the community instead); 2) the rights of people who interact with state or local police or sheriffs' departments; 3) the rights of people to have safe access to reproductive health care clinics or religious institutions; and 4) the rights of people to practice their religion in state and local institutions. We are not authorized to address issues with federal facilities or federal officials.

If your concern is not within this Section's area of work, you may wish to consult the Civil Rights Division web page to find the correct section: www.justice.gov/crt.

The Special Litigation Section only handles cases that arise from widespread problems that affect groups of people. We do not assist with individual problems. We cannot help you recover damages or any personal relief. We cannot assist in criminal cases, including wrongful convictions, appeals or sentencing.

If you have an individual problem or seek compensation or some other form of personal relief, you may wish to consult a private attorney or a non-profit or legal aid organization for

Judge Wright, enclosed within another envelope is a copy of the EEO report of the findings of no harm inflicted by the ABL now for 16-17-18
J. Greene

assistance. There are only two areas in which we can assist an individual or address a single incident: 1) we may be able to assist you if you are being prevented from practicing your religion in a prison, jail, mental hospital or other facility operated by or for a state or local government; 2) we may be able to assist you if you have experienced force or the threat of force when accessing a reproductive health care facility or religious institution.

For more information about the Special Litigation Section or the work we do, please visit our web page:
www.justice.gov/crt/about/spl/.

Sincerely,

/s/

Steven H. Rosenbaum
Section Chief
Special Litigation Section

photo copy

The New York Times
Editorial: Segal Dept.

June 6th 2019

Dear Staff, my name is Jack Greene, enclosed are documented facts of money in part, of how several million dollars and counting of the Federal tax paying of the United States, has and is being used over the past sixteen 16 years in the endless attempted corrupt political cover up of inhumane crimes by the State of Arkansas of deadly human and Civil Rights Violations, causing years of torture 24/7 through pre-cussion concussion brain trauma injuries with total neurological nerve destruction of a person as I am being forced to live and endure so inhumanly until it causes my demise from the pro-long endlessly inflicted injuries and symptoms then from before my repeatedly for the 3rd time condemned punishment will ever be allowed to be carried out due to this corrupt political cover up here within this legal system of justice here in the State of Arkansas.

Editorial Staff, all the enclosed documented facts and many others are on file within the U.S. Dept. of Justice Civil Rights Division, in Washington, D.C. Copies of correspondence are enclosed for which they would not have their U.S. Dept. Staff, FBI, etc. investigate such violation crimes due to the facts that it is the self appointed Ark. Federal Defenders office, a branch of the U.S. Fed. Government, who has and is in collaboration with the State of Arkansas and it's ADC who con and is spending millions of Fed. taxes in their quest to help cover such inhumane crimes up.

Very Sincerely
Jack B. Greene

U.S. Department of Justice
Civil Division, Tort Branch
Federal Tort Claims Act Staff

(18,

Ms. Shonetta Y. Cutler

January 3, 2017

U.S. Department of Justice

Civil Rights Division

Special Litigation Section

Patrick Henry Building

950 Pennsylvania Avenue, N.W.

Washington, D.C. 20530

Re: New Information re Administrative Tort Claim for
Jack Gordon Brune

Dear Ms. Cutler,

This is in regard to a new submission dated December, 7, 2016, regarding Mr. Jack Gordon Brune. The Department of Justice received it on December, 14, 2016, as it appears that the submission is addressed to the Civil Rights Division, I am forwarding it to your office.
If you have any questions, please feel free to contact me.

Very truly yours,

Enclosed,

Mr. Jack Gordon Brune

ADC# 000982

Arkansas Department of Corrections

P.O. Box 400

Grady, Ar. 71644-0600

Kope S. Suwann

Legal Assistant

Civil Division, Tort Branch

800-4

STATE OF ARKANSAS

COUNTY OF LINCOLN

)

) §

)AFFIDAVITI, Jack Gordon Greene, after first being duly sworn, do hereby swear, depose

and state that:

Record of legal mail sent to the U.S. Dept. of Justice, Civil Rights Division, c/o
Steven P. Rosenbaum and Sharvotta Cutler, 145 N. St. Washington, DC 20530
sent by me from the Ark. Dept. of Corrections, Death Row (139) documents
total of medical injuries, records of inhumane torture and the costly
attempted cover up within Ark. State and Federal doc. etc.
(note: Documented prof of 13-yr's of ADC endless maim and torture: Costly cover up)
Dec. 2, 2016, 6-doc. pages, signed for by Sgt. Brothers, 5:30 AM reg-post
Dec. 2, 2016, 41-doc. pages, signed for by Sgt. Brothers, 4:30 AM Cost \$262
Jan. 11, 2017, 2-doc. pages, signed for by Sgt. Brothers, 4:00 AM reg-post
Jan. 13, 2017, 56-doc. pages, signed for by Sgt. Brothers, 3:30 AM Cost \$394
Jan. 26, 2017, 14-doc. pages, signed for by Sgt. Brothers, 3:45 AM 2-reg-post
Feb. 1, 2017, 3-doc. pages, signed for by Sgt. Brothers, 2:15 AM Cost \$469
Feb. 6, 2017, 7-doc. pages, signed for by Sgt. Brothers, 4:30 AM reg-post
(note: Jan 2017 (9-doc) on sp legal med. doc. etc. was mailed to Ms. Cutler, Dept.
of Justice, from a friend to PO Box 663, Booneville, Ark. 72813)

End of Statement

I further swear that the statements matters and things contained herein are true and accurate to the
 best of my knowledge information and belief

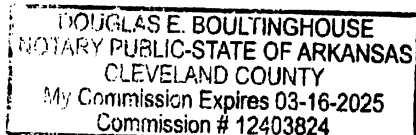
March 21 / 2017
 DATE

Jack G. Greene
 AFFIANT

SUBSCRIBED AND SWORN TO BEFORE ME, a Notary Public, on this 21 day ofMarch, 2017.

Douglas E. Boultinghouse
 NOTARY PUBLIC

My Commission Expires:



Ark. Atty. Gen. Rutledge
 Ark. Gov. Hutchinson
 ADC Director, Kelley

July 24th 2019

Ark. Gov. appointees.

Apparently the State of Arkansas, and its Dept. of Corrections are as above the law that it can commit U.S. Postal, Fed. Mail and wire fraud and felony theft of inmate funds, by not providing me my Certified mail receipt, or the return receipt, party must sign, for legal documents that were to be mailed for the New York Times, "only," by Certified Mail Return Receipt Requested, at my cost of \$14⁰⁰ 6/12/2019

Instead the Ark. Dept. of Corrections, provides me, apparently, two bogus U.S. PS tracking sheets, with one being attached to one of two ADC complaints filed, copies enclosed, for the State and County of Omaha, NE. Zip Code 68110

Apparently of course these crimes are being committed within the endless quest in the cover-up of more serious crimes from being exposed by the State of Arkansas, as described within the New York Times letter, copy enclosed.

Jack Gordon Greene
 Ark. Death Row # 5K-422

mailroom

UNIT LEVEL GRIEVANCE FORM (Attachment I)Unit/Center Vadner MazeName Jack Gordon GreeneADC# SK-922Brks # CRV-422Job Assignment Death Row7/1/19 (Date) STEP ONE: Informal Resolution(Date) STEP TWO: Formal Grievance (All complaints/concerns should first be handled informally.)
If the issue was not resolved during Step One, state why: _____

(Date) EMERGENCY GRIEVANCE (An emergency situation is one in which you may be subject to a substantial risk of physical harm: emergency grievances are not for ordinary problems that are not of serious nature). If you marked yes, give this completed form to the designated problem-solving staff, who will sign the attached emergency receipt. In an Emergency, state why: _____

Is this Grievance concerning Medical or Mental Health Services? _____ If yes, circle one: medical or mental

BRIEFLY state your one complaint/concern and be specific as to the complaint, date, place, name of personnel involved and how you were affected. (Please Print): Note: Unable to Print due to Bio long A.P.C.inflicted Pre-Cussion, Concussion, brain injuries & total neurological & nerve destruction
On June 17-2019 the ADC took \$14.50 off my account for legal mail but to be sent
only by certified mail return receipt. I requested ADC mail supervisor J. Allen
would not reply to my two requests for receipt. On 6-18 No. Westlake called
and spoke w/ ADC J. Allen, and was told I should get my C.M. receipt that evening
which I did not. On 6-20 No. Westlake, of the ADC Fed. Detention office spoke
again with ADC J. Allen, as to where my C.M. receipt was, and was told nothing of
it, but I would get my return receipt when it comes back, now after going on
three weeks the ADC has not provided me my post marked certified mail receipt
that cost me \$14.50 for the 3.5 legal gov. signed for return receipt and if ADC
does not produce my both C.M. receipts, it means the ADC confiscated my legal mail
and took the funds off my account to make it look pay though mailed stolen funds
ADC which is very negligent receipts are not produced due to attached contained mail.

Inmate Signature

Jack B. Greene SK-922

Date

July 7th 2019

If you are harmed, threatened because of your use of the grievance process, report it immediately to the Warden or designee.

THIS SECTION TO BE FILLED OUT BY STAFF ONLY

This form was received on _____ (date), and determined to be Step One and/or an Emergency Grievance

(Yes or No). This form was forwarded to medical or mental health? _____ (Yes or No). If yes, name

of the person in that department receiving this form: _____

Date

Gordon39936Greene07-08-19

PRINT STAFF NAME (PROBLEM SOLVER)

ID Number

Staff Signature

Date Received

Describe action taken to resolve complaint, including dates: Ms. Allen advised your mail was sent out.

Certified.

Staff Signature & Date Returned

Inmate Signature & Date Received

This form was received on _____ (date), pursuant to Step Two. Is it an Emergency? _____ (Yes or No).

Staff Who Received Step Two Grievance: _____ Date: _____

Action Taken: _____ (Forwarded to Grievance Officer/Warden/Other) Date: _____

If forwarded, provide name of person receiving this form: _____ Date: _____

DISTRIBUTION: YELLOW & PINK - Inmate Receipts; **BLUE** - Grievance Officer; **ORIGINAL** - Given back to Inmate after Completion of Step One and Step Two.

7/3/2019

USPS.com® - USPS Tracking® Results



Delivery Exception Updates ⓘ



Package In-Transit Updates ⓘ

Tracking History**June 24, 2019, 9:45 am**

Delivered, Left with Individual

OMAHA, NE 68110

Your item was delivered to an individual at the address at 9:45 am on June 24, 2019 in OMAHA, NE 68110.

June 24, 2019, 6:54 am

Departed USPS Regional Facility

OMAHA NE DISTRIBUTION CENTER

June 23, 2019

In Transit to Next Facility

June 22, 2019, 11:35 am

Arrived at USPS Regional Facility

OMAHA NE DISTRIBUTION CENTER

June 21, 2019, 9:14 am

Departed USPS Regional Facility

LITTLE ROCK AR DISTRIBUTION CENTER

June 20, 2019, 9:34 pm

Arrived at USPS Regional Facility

LITTLE ROCK AR DISTRIBUTION CENTER

Product Information


See Less ^



Arkansas Department of Correction

Director's Office
6814 Princeton Pike
Pine Bluff, Arkansas 71602-9411
Phone: (870) 267-6200
Fax: (870) 267-6244
www.arkansas.gov/doc

MEMORANDUM

TO: Inmate Jack Greene, SK#922
FROM: ^{YSM}

Lyn Bennett, Executive Assistant to the Director
RE: Complaints
DATE: July 26, 2019

I have reviewed the correspondence you sent to my office concerning your unit complaints in regards to mail.

I will forward a copy of your letter to Warden Gibson for review.

If I may be of further assistance, please feel free to contact my office.

Cc: Warden Gibson

LB/ms

Dear Georgie, Mary Ellen, Angie, Danny, and Karen:

The document enclosed are the facts of how I've been tortured for the last sixteen years and the costly cover-up behind it, for which Tonya Willingham of the Arkansas Federal Public Defender's Office in collaboration with the Arkansas Department of Correction misled, lied, and manipulated all of you to believe that I was having some kind of mental breakdown when in fact that was not the case. As such you were manipulated and lied to by North Carolina Sheriff Dane Mastin and North Carolina Bureau of Investigation Agent Steve Cables to help keep me this death sentence whenever Steve Cables put Angie to come out here on a plane to testify against me for which under no law were you obligated to do this, as I kept telling everybody. Instead of you guys helping me expose this for what it is, as described in this letter and making videos as such, after learning the facts of my injuries, you still wouldn't help me out, help me expose this. My question is: Why? And I guess it stems back from us growing up together. God, I pray we all find forgiveness for what we've done to each other all our lives. It's still not too late. I wouldn't leave any of you all like this unless you feel I deserve such. My case out here under Greene v. Arkansas will forever be disgracing our family name and will forever be used in cases across this country because of such.

Love,

A handwritten signature in black ink that reads "Jack". The script is cursive and fluid, with a prominent loop at the end of the word.

Your Brother Jack

Pres. Donald Trump
The White House

September 11th 2019

Please find enclosed documented facts of how and why the U.S. Dept. of Justice Civil Rights Division, has since before 2017 refused to investigate deadly Civil and Human Rights violations as described within enclosed photo copy letter for the New York Times.

The Dept. of Justice is allowing another Fed. Gov. branch of its self to waste and spend millions of dollars of the U.S. Fed. tax paying public of this Country to be used in the political cover up of inhumane crimes of maim and torture here in the United States, State of Arkansas.

When the U.S. Justice Dept. does nothing to investigate such inhumane crimes that are being endlessly covered up at a very large cost of the Fed. tax paying public, where does this leave justice for the in-justice inflicted on my self as well as the public, where does justifiably become so deadly within our Gov. U.S. Justice System of Laws, when ever it can without intervention allow deadly crimes to be covered up by members of its own U.S. Government Federal Agencies, as in this case with my self appointed Ark. Fed. Defenders.

Mr. President, I sincerely request that you please have your recent appointive U.S. Atty. Gen. William Barr and Inspector Gen. investigate this deadly cover up for what it is (torture) very sincerely
PS "God" I pray you win re-election!
Jack B. Greene



Applied Neuroscience, Inc.

8200 Bryan Dairy Road Suite #300, Largo, Florida 33777

Phone: 727-244-0240 Fax: 727-392-1436 Email: qeeg@appliedneuroscience.com

Quantitative EEG Analyses

PATIENT INFORMATION

Name: Greene, Jack

Exam#: 600000097

Age: 64.34

Gender: Male

Handedness: Right

Eyes: Closed

RECORDING

Date: 07/16/2019

Ref. By: John Williams

Test Site:

Analysis Length: 01:40

Ave. SH Reliability: 0.99

Ave. TRT Reliability: 0.96

MEDICATION: None Reported

HISTORY: None Reported

SUMMARY: The qEEG analyses were deviant from normal and showed dysregulation in bilateral frontal lobes - especially in the right frontal lobe, bilateral temporal lobes - especially in the right temporal lobe, bilateral parietal lobes - especially in the left parietal lobe, and bilateral occipital lobes - especially in the left occipital lobe. LORETA showed dysregulation in the right frontal eye field, right gustatory primary cortex, and right angular gyrus. The frontal lobes are involved in executive functioning, abstract thinking, expressive language, sequential planning, mood control, and social skills. The temporal lobes are involved in auditory information processing, short-term memory, receptive language on the left, and face recognition on the right. The parietal lobes are involved in visual-spatial information processing, short-term memory, executive attention, receptive language on the left, and empathy control and awareness of emotional expression in others on the right (e.g., prosody). The occipital lobes are involved in the visual processing of color, form, movement, visual perception, and spatial processing. The frontal eye fields are involved in voluntary eye control and focusing of visual attention. The gustatory primary cortex is involved in the perception of taste including odor, texture and temperature of food. The angular gyrus is involved in processes related to language, number processing and spatial cognition, memory retrieval, attention and theory of mind. To the extent there is deviation from normal electrical patterns in these structures, then sub-optimal functioning is expected.

Robert W Thatcher, Ph.D., QEEG-D, BCIA, ECNS

DETAILED NARRATIVE

LINKED EARS: The Linked Ears power spectral analyses were deviant from normal with excessive power in bilateral frontal regions - especially in the right frontal region from 7 - 9 Hz and 30 Hz. Excessive power was present in bilateral temporal regions - especially in the right temporal region from 7 - 8 Hz. Excessive power was present in bilateral parietal regions - especially in the left parietal region from 7 - 8 Hz. Excessive power was also present in bilateral occipital regions - especially in the left occipital region at 8 Hz.

SURFACE LAPLACIAN: The Laplacian power spectral analyses were deviant from normal with excessive power in bilateral frontal regions - especially in the right frontal region over a wide frequency range. Excessive power was present in bilateral temporal regions - especially in the right temporal region from 6 - 8 Hz. Excessive power was also present in bilateral parietal regions - especially in the right parietal region from 7 - 8 Hz.

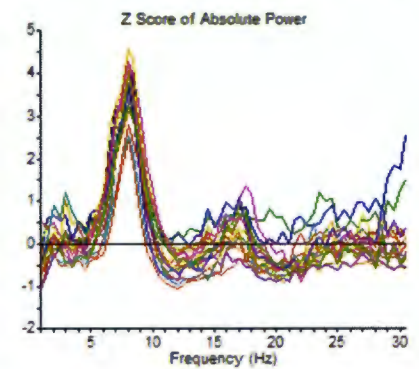
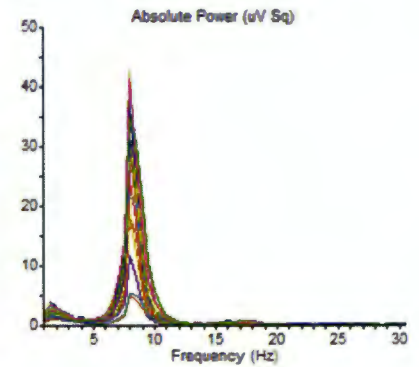
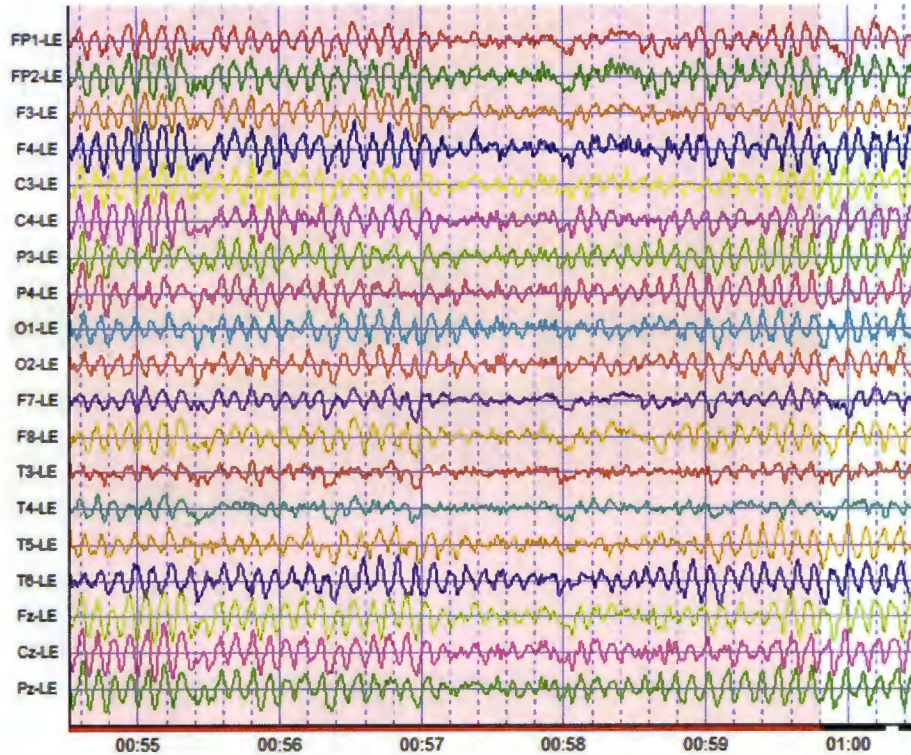
NEUROIMAGING: LORETA 3-dimensional source analyses were consistent with the surface EEG and showed elevated current sources in the right angular gyrus with a maximum at 6 Hz (Brodmann area 39). Elevated LORETA current source was present in the right gustatory primary cortex with a maximum at 7 Hz (Brodmann area 43). Elevated LORETA current source was present in the right frontal eye field with a maximum at 8 Hz (Brodmann area 6). Elevated LORETA current source was present in the right frontal eye field with a maximum at 9 Hz (Brodmann area 6).

CONNECTIVITY ANALYSES: EEG amplitude asymmetry, coherence and EEG phase were deviant from normal, especially in frontal, temporal, parietal and occipital relations. Elevated coherence was present in frontal, temporal, parietal and occipital regions which indicates reduced functional differentiation. Reduced coherence was present in frontal, temporal, parietal and occipital regions which indicates reduced functional connectivity. Both conditions are often related to reduced speed and efficiency of information processing.

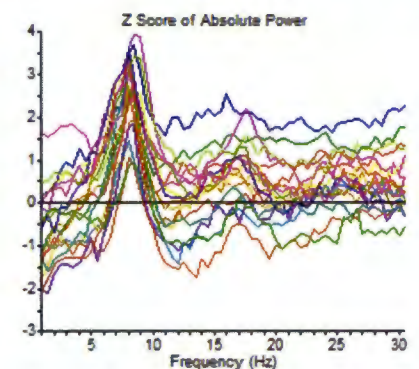
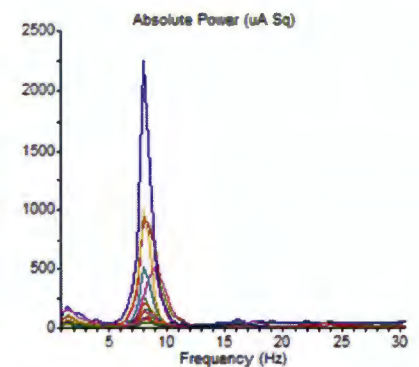
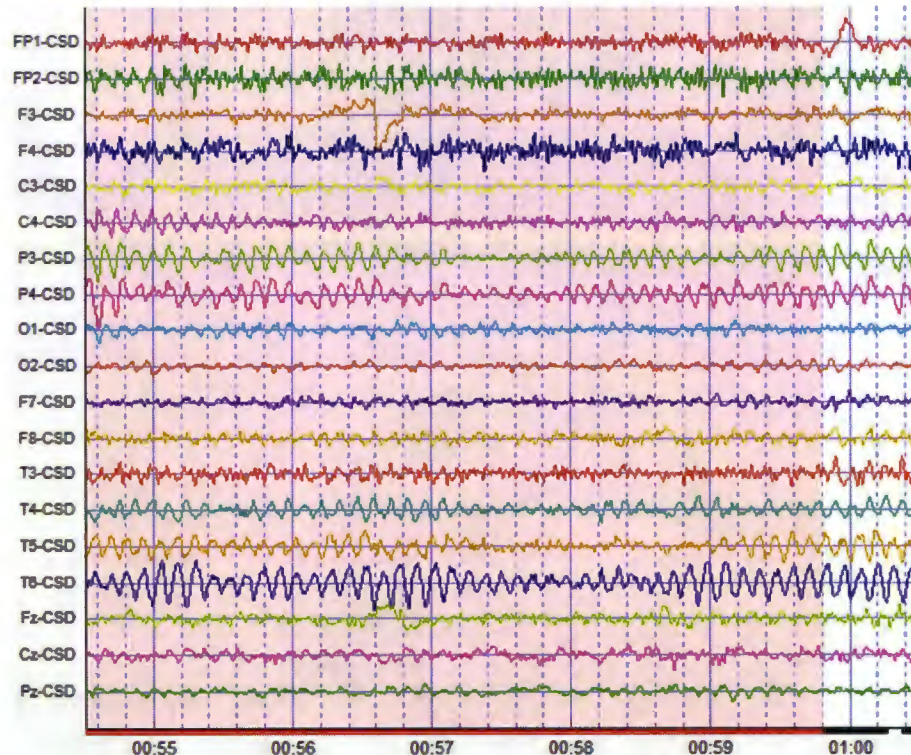
600000097

Conventional EEG Samples and Quantitative EEG Analyses

Example of Linked Ears EEG and Absolute Power - Eyes Closed Condition



Example of Laplacian EEG and Absolute Power - Eyes Closed Condition

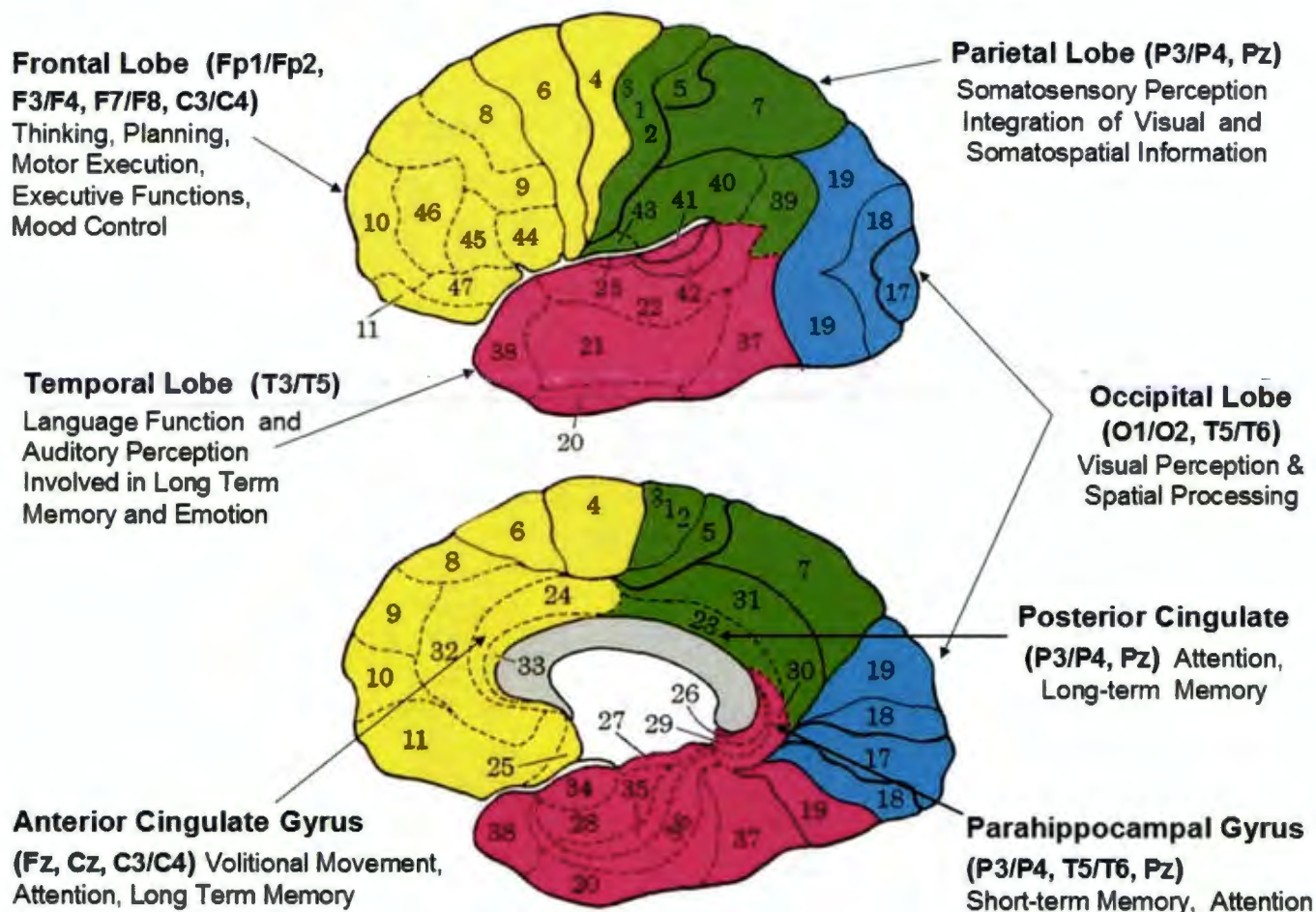


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Electrical NeuroImaging

Linking a patient's symptoms and complaints to functional systems in the brain is important in evaluating the health and efficiency of cognitive and perceptual functions. The electrical rhythms in the EEG arise from many sources but approximately 50% of the power arises directly beneath each recording electrode. Electrical NeuroImaging uses a mathematical method called an "Inverse Solution" to accurately estimate the sources of the scalp EEG (Pascual-Marqui et al, 1994; Pascual-Marqui, 1999). Below is a Brodmann map of anatomical brain regions that lie near to each 10/20 scalp electrode with associated functions as evidenced by fMRI, EEG/MEG and PET NeuroImaging methods.

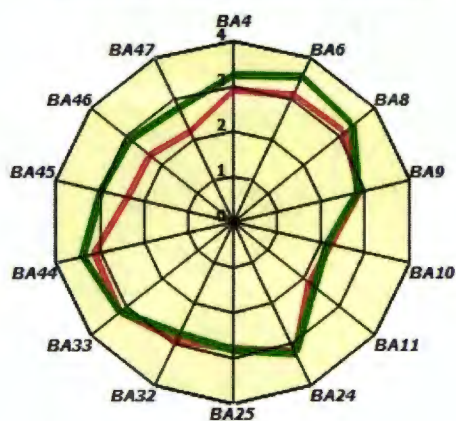
Symptoms, Electrodes & Brodmann Areas



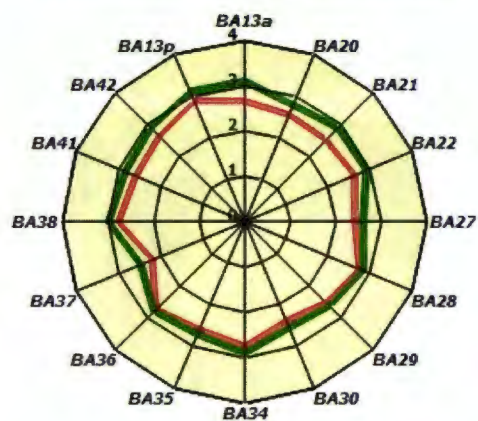
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BRAIN BRODMANN REGIONS

FRONTAL BRODMANN AREAS

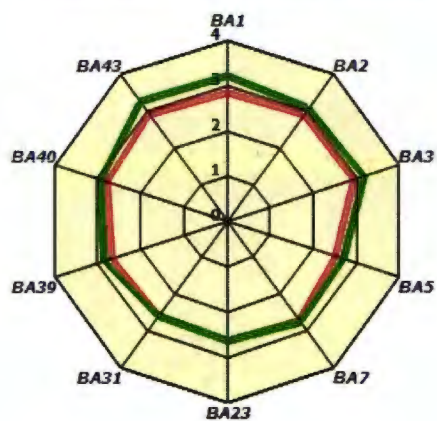


TEMPORAL BRODMANN AREAS

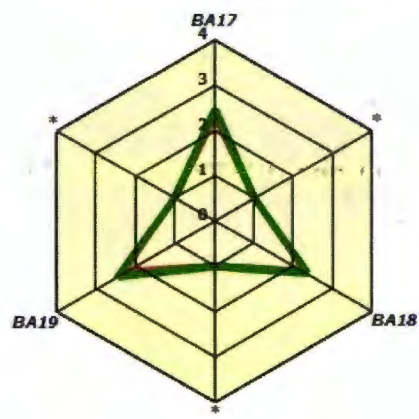


■ LEFT ■ RIGHT

PARIETAL BRODMANN AREAS

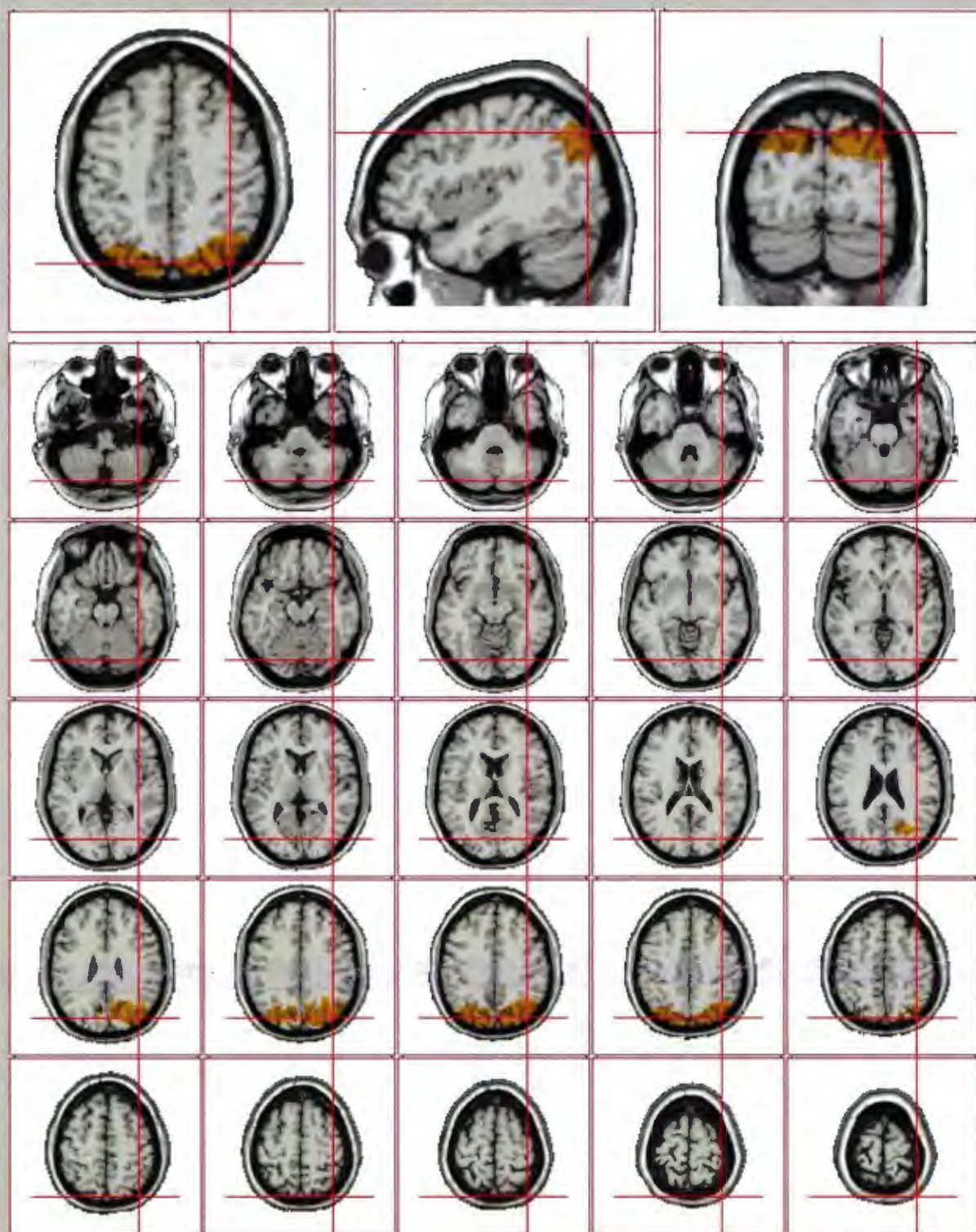


OCCIPITAL BRODMANN AREAS



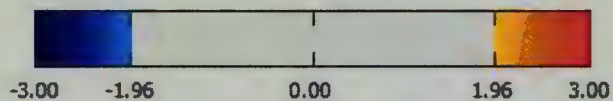
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[TX = 40, TY = -80, TZ = 43] mm - Brodmann Area: - Value = 2.14478 - 6 Hz



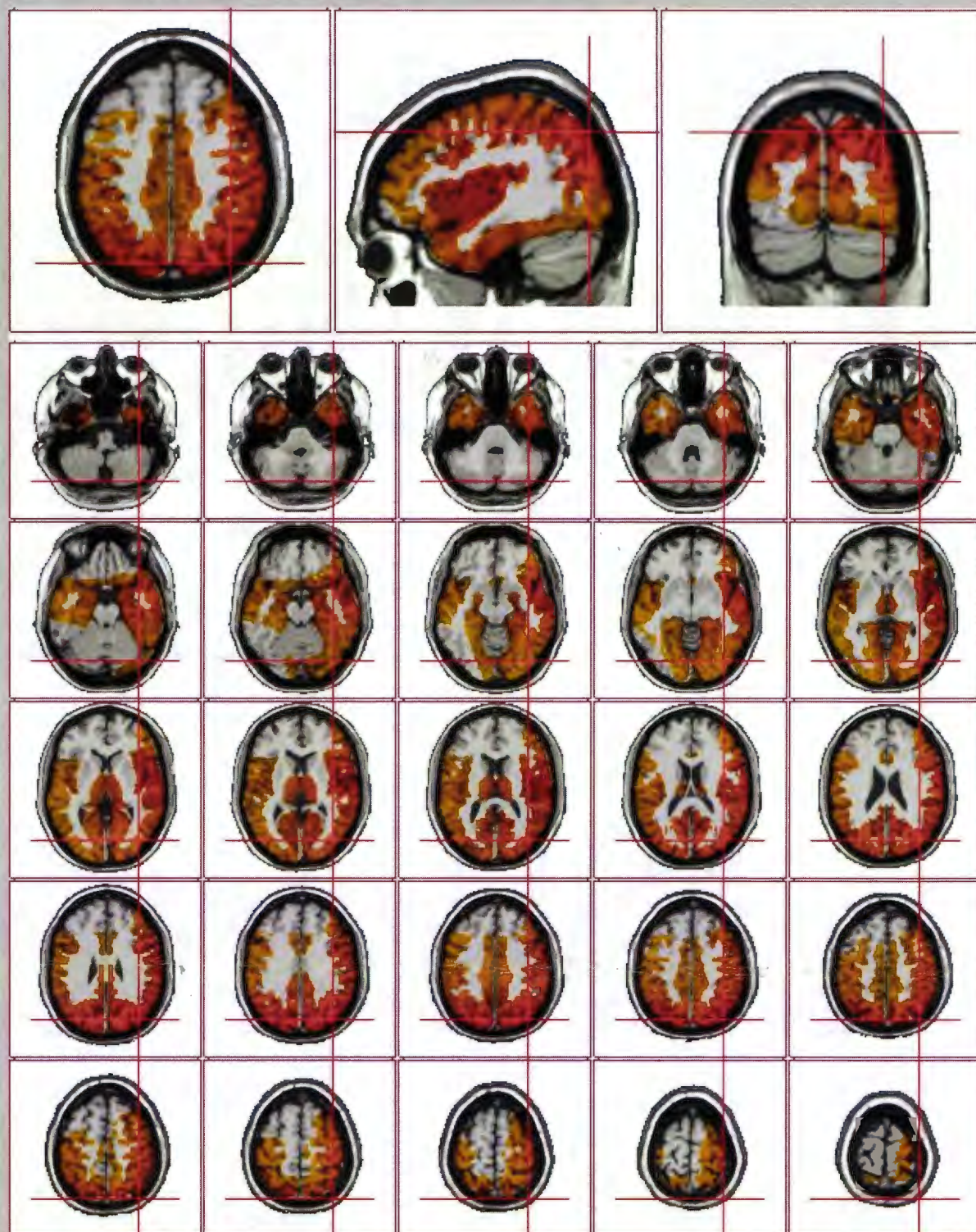
© 2016-2019 Applied Neuroscience, Inc.

Z-Score CSD



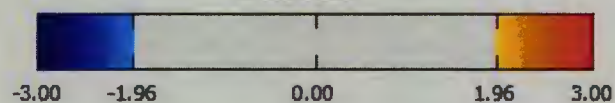
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[TX = 40, TY = -80, TZ = 43] mm - Brodmann Area: - Value = 2.90716 - 7 Hz



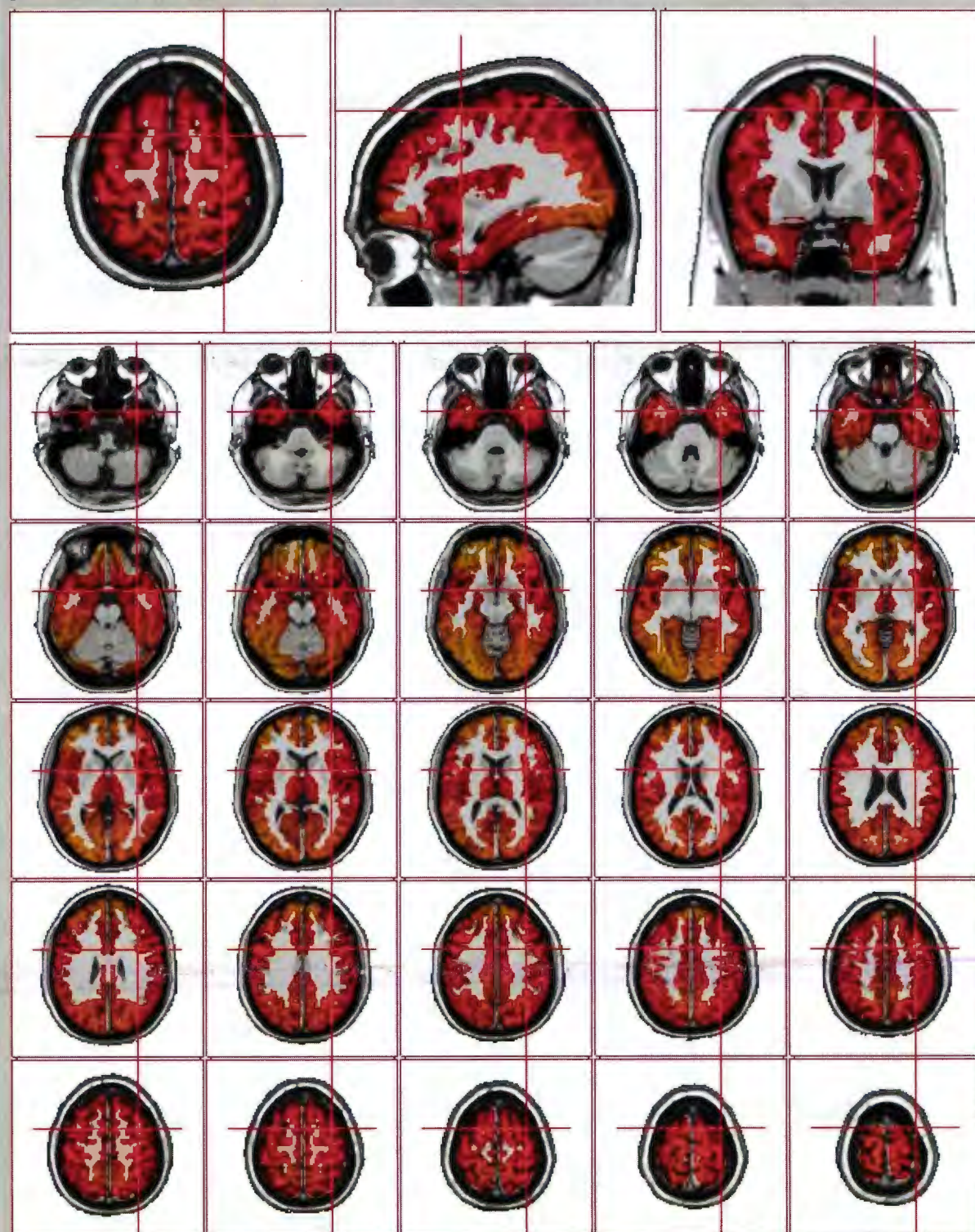
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Z-Score CSD



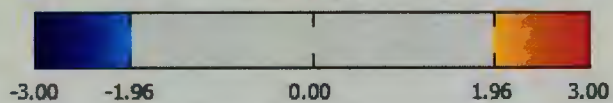
600000097

[TX = 35, TY = 5, TZ = 58] mm - Brodmann Area: 6 - Right - Value = 3.66226 - 8 Hz



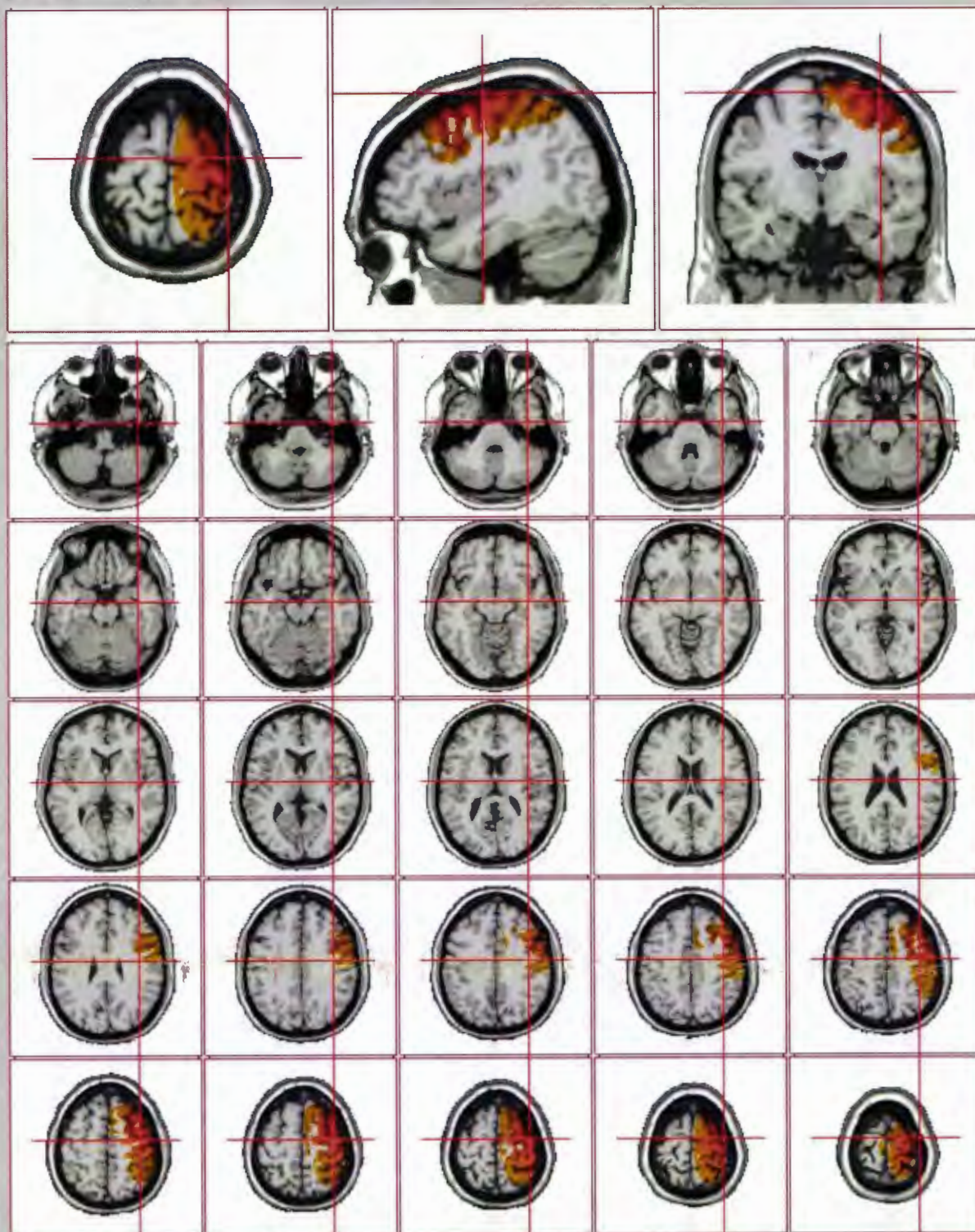
© 2016-2019 Applied Neuroscience, Inc.

Z-Score CSD



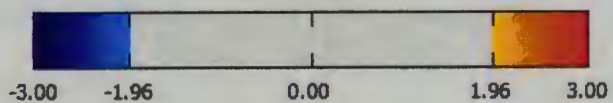
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[TX = 40, TY = -10, TZ = 68] mm - Brodmann Area: - Value = 2.97471 - 9 Hz

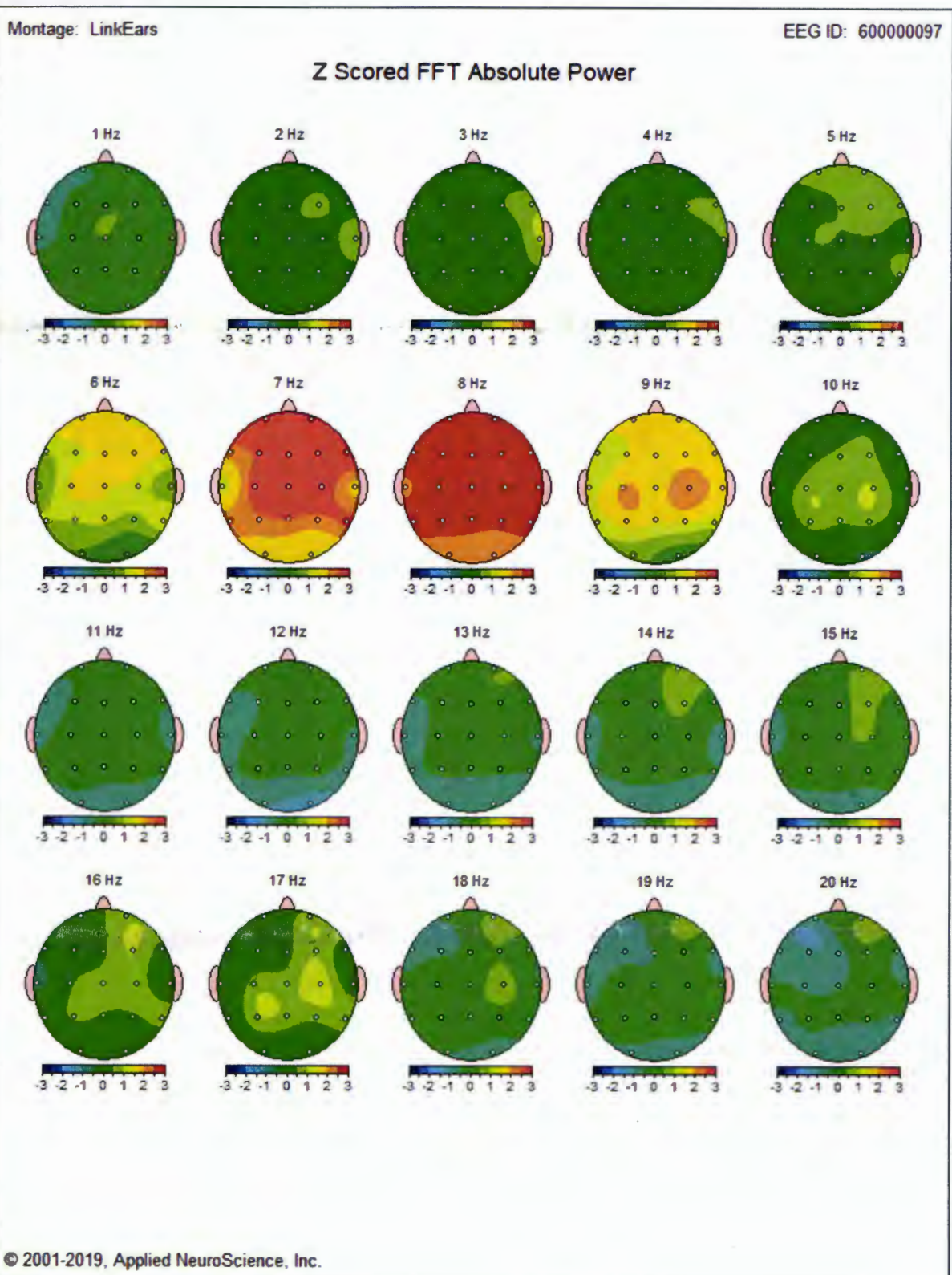


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Z-Score CSD



600000097

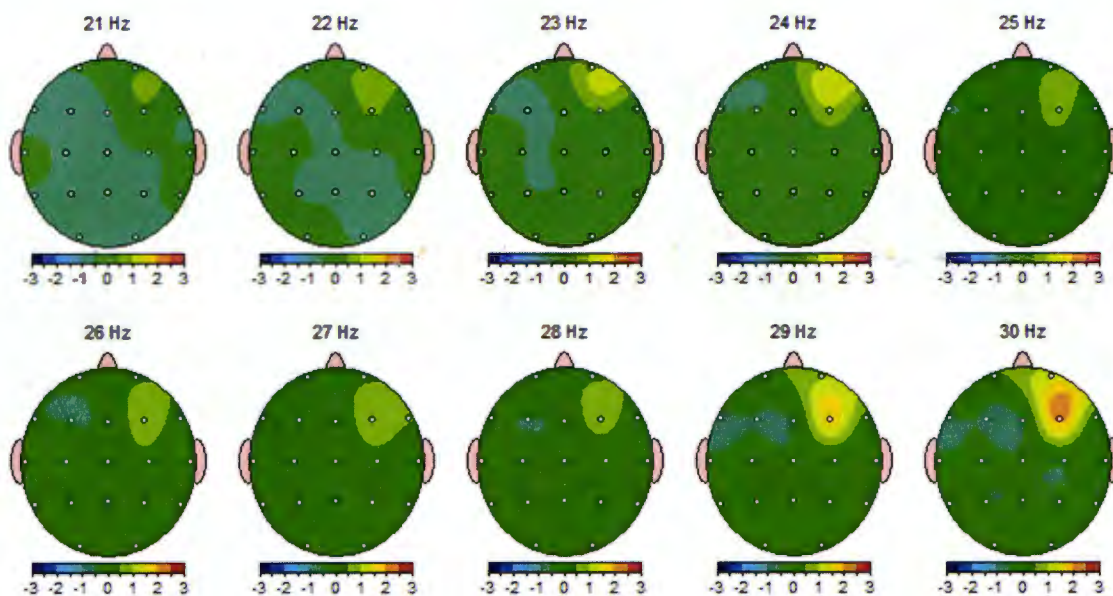


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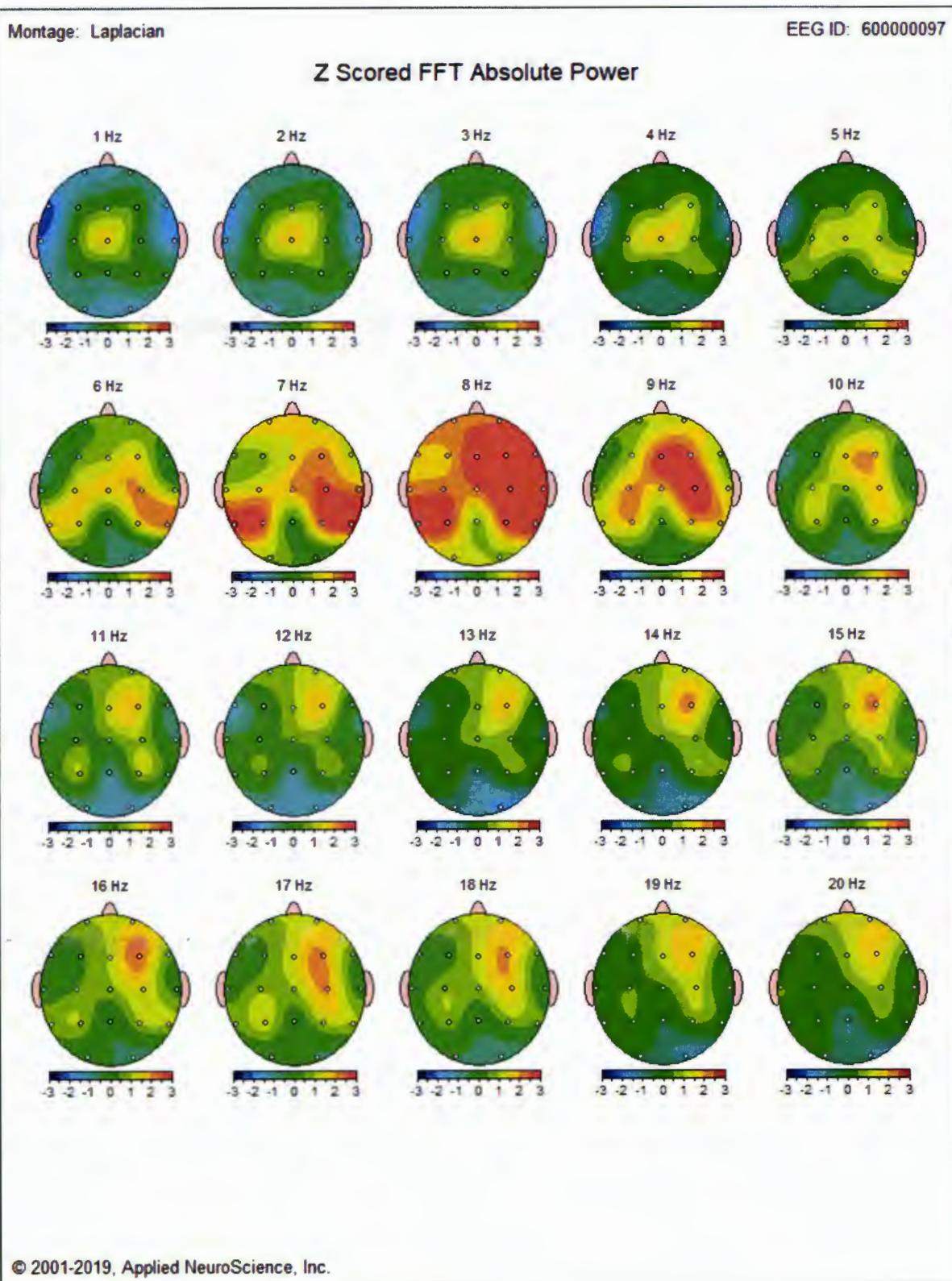
Montage: LinkEars

EEG ID: 600000097

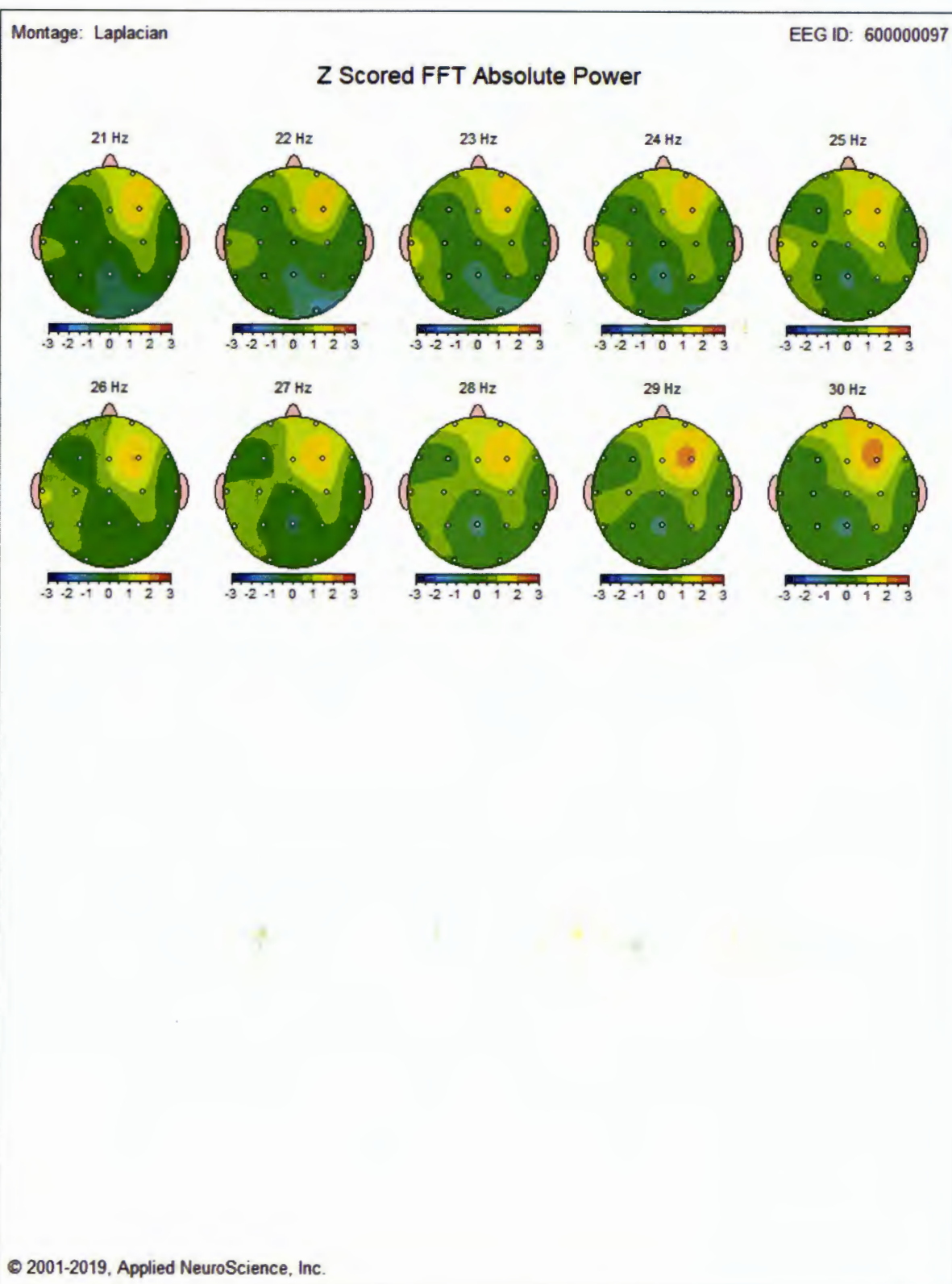
Z Scored FFT Absolute Power



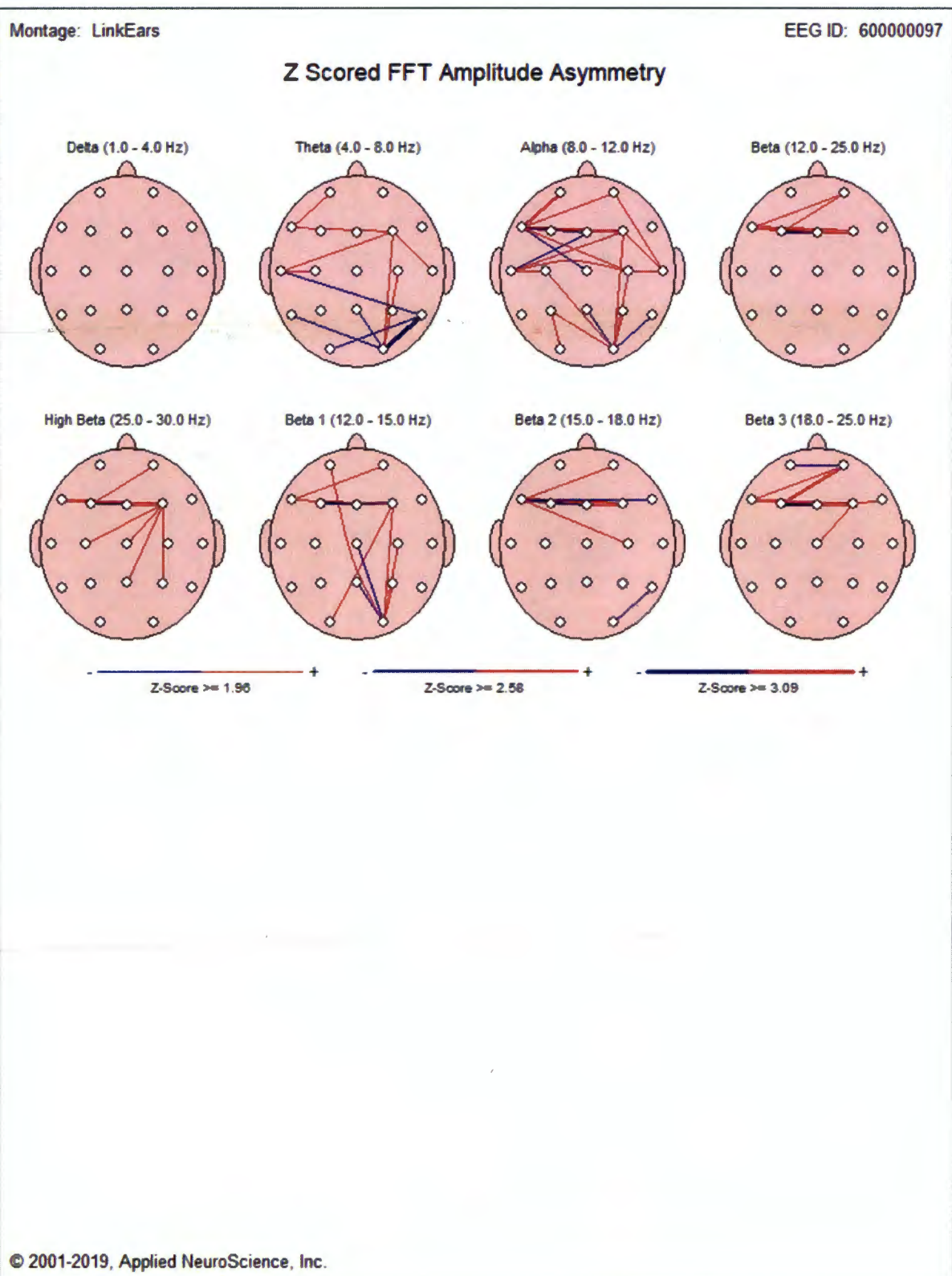
600000097



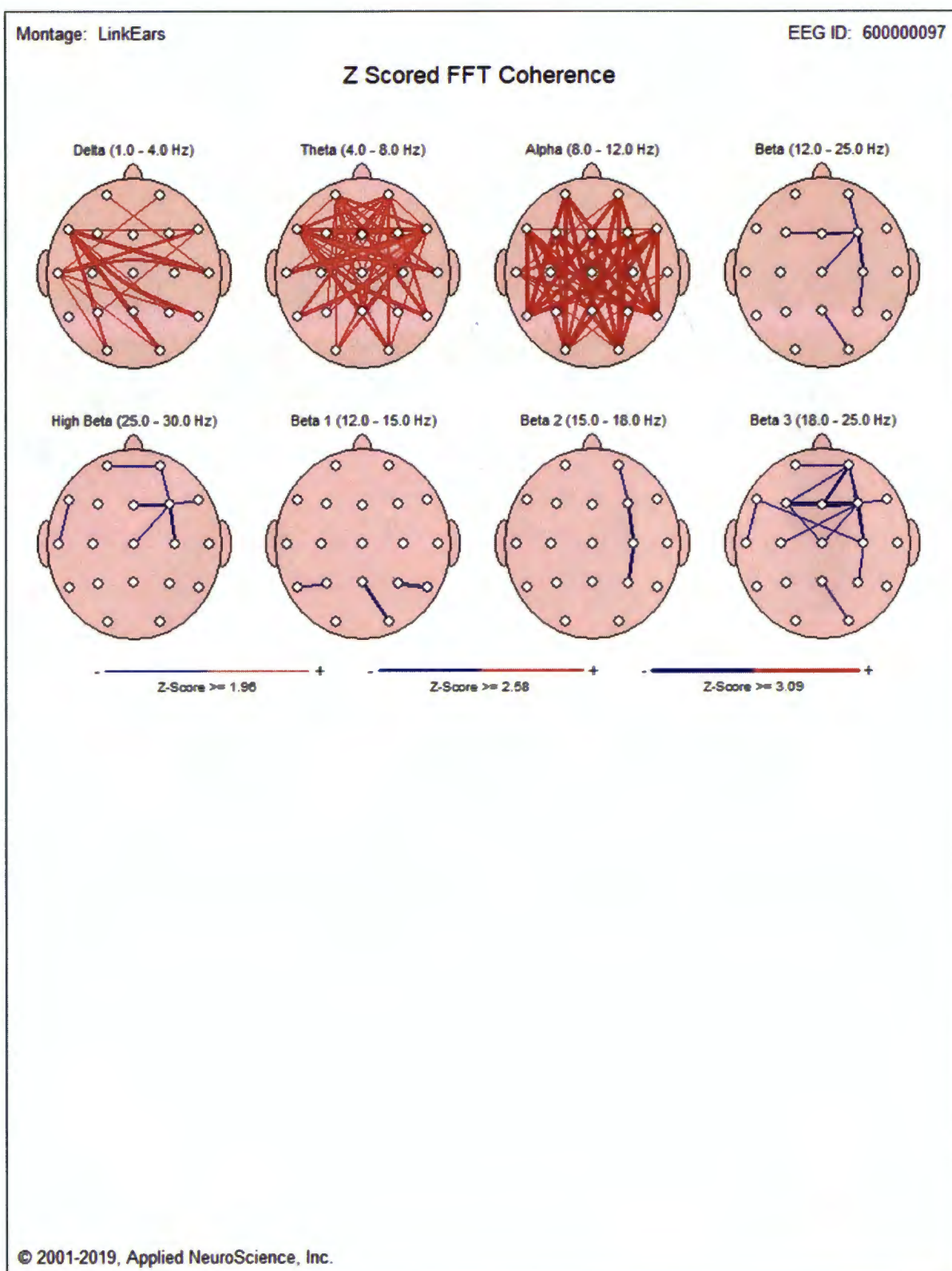
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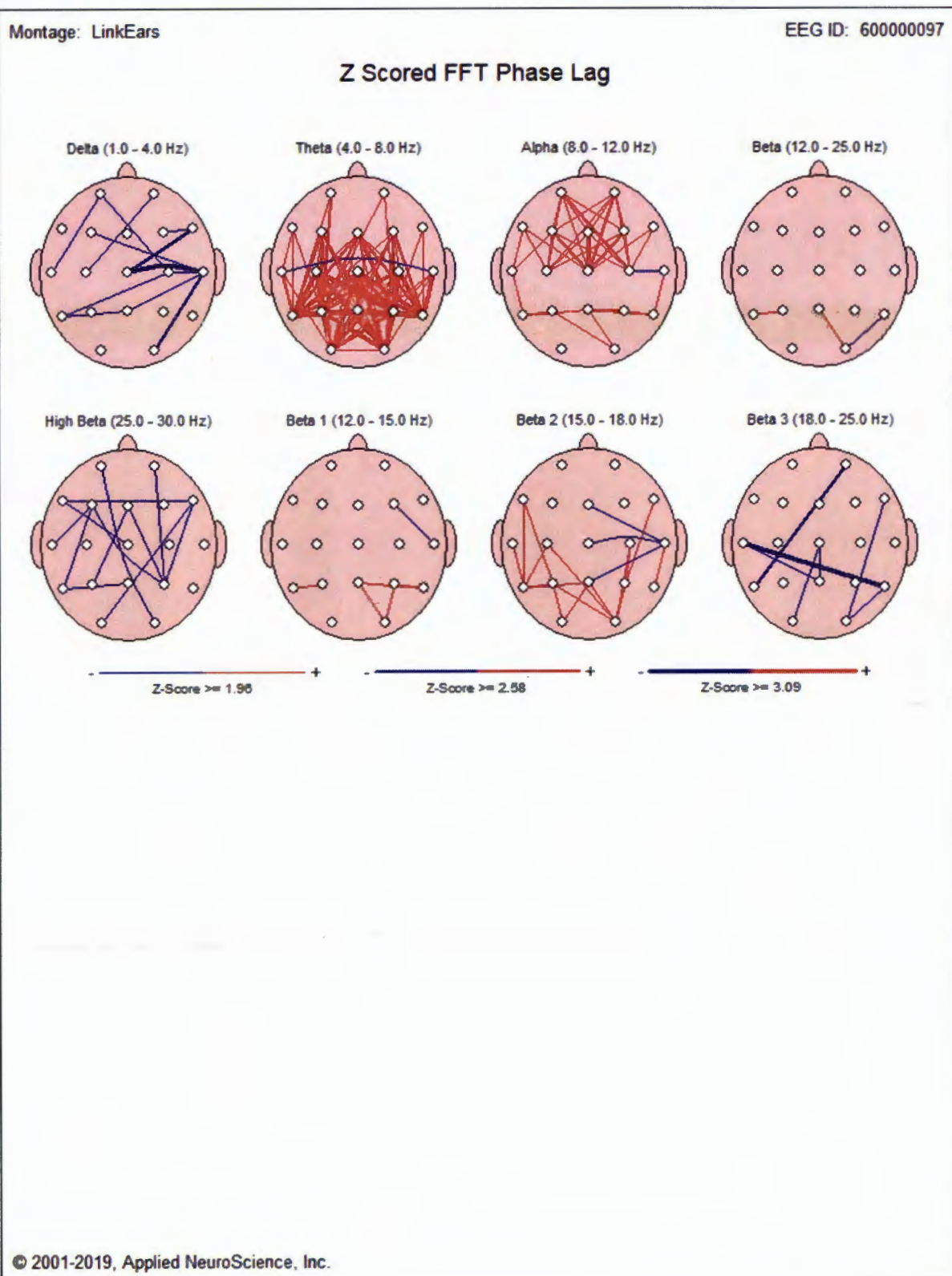
600000097



600000097



600000097



600000097

Montage: LinkEars

EEG ID: 600000097

Technical Information

Record Length: 03:10

Edit Length: 01:40

Reliability:

	Split Half	Test Retest
Average	0.99	0.96
FP1	0.99	0.98
FP2	0.99	0.98
F3	0.99	0.96
F4	0.99	1.00
C3	0.99	0.99
C4	0.99	0.97
P3	1.00	0.89
P4	0.98	0.90
O1	0.99	0.89
O2	0.98	0.96
F7	1.00	1.00
F8	0.99	0.99
T3	0.99	0.98
T4	0.97	0.97
T5	1.00	0.94
T6	0.97	0.95
Fz	0.99	0.99
Cz	0.99	1.00
Pz	1.00	0.93

Sampling Rate: 256

Collection Hardware: Deymed

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An Addendum to NeuroGuide QEEG Report

Important Disclaimer:

QEEG tests are ancillary tests that are not intended to provide a diagnosis by themselves, but are used to evaluate the nature and severity of deregulation in the brain such as in mild traumatic brain injury (MTBI). The QEEG tests provide a quantitative assessment of areas of brain dysfunction and information on impaired conduction and connectivity between different regional neural networks in the brain. The assessment of impaired connectivity is based on abnormal measurements of Coherence and Phase. The TBI Discriminant and Concussion Index do not provide a diagnosis for MTBI but only information on the presence of a pattern in the EEG that is often found in patients with a history of mild traumatic brain injury. The TBI Discriminant and Concussion Index also provide information about connectivity and excitability of brain regions. The TBI Discriminant and Concussion Index are to be used only on patients with a clinical history and symptoms of a Traumatic Brain Injury and Post Concussion syndrome. The diagnosis of MTBI is a clinical one and is not based on any one test. A diagnosis is performed by the clinician, who integrates the medical history, clinical symptoms, neurocognitive tests with the abovementioned brain function tests as well as other information to render a diagnosis. The information on impaired brain connectivity is derived primarily from abnormal measurements of Coherence and Phase. Assessments of regional abnormality rely also on abnormal amplitude (power) distribution across the spectrum of EEG frequencies as compared to the normative database.

Artifact Rejection:

NeuroGuide uses the standard deletion of artifact method to only select artifact free EEG data for analyses. The entire EEG record must be viewed by clicking end and page down and page up and home and by arrow keys and by moving the wiper at the bottom of the screen. A careful visual examination of the EEG record is necessary to detect epilepsy and gross pathology as well as to identify artifacts. The goal is to avoid selecting any artifact and instead to only select artifact free segments of EEG. There are three methods of obtaining Artifact Free Selections: 1- Manual Selections are obtained by pressing the left mouse button and dragging to select, press right mouse button and drag to erase; 2- Artifact Free Template Matching; and 3- Z Score Artifact Free Selections. All three methods can be used and manual selection takes priority over all methods of artifact free selection. That is, left and right mouse button dragging will override all other methods. View the Length of EEG Selections in seconds and View the dynamic Reliability Measures of the EEG Selections. For Manual Selections of Artifact Free EEG Depress the left mouse button and drag it over the sections of EEG that do not contain eye movement or muscle or drowsiness or head movement or any other type of artifact. Select at least 60 seconds of artifact free EEG data as shown in the Edit Time counter (upper left of screen). If a mistake is made, then right mouse click and drag over the EEG traces to erase a selection. View the Test Re-Test reliability which must be at least 0.90. Scan the EEG record and select real and valid EEG and avoid selecting artifact. Splice discontinuities are removed by filtering and exercises to prove no distortion due to splicing are available in the Handbook of QEEG and EEG Biofeedback. Pattern recognition routines are used to identify likely eye movement (EOG), drowsiness and muscle (EMG) artifact in the record and thereby mark these suspected segments and disallow them to be included in subsequent analyses. The pattern recognition routines are based on physics and physiology of artifact. For example, all electrical sources decrement with distance and in the case of eye movement detection is by the presence of an electrical field gradient in the delta frequency band from $Fp1/2 > F3/4 > C3/4$ and/or 120 degrees or higher of inverse phase between F7 and F8. EMG electrical gradients at > 10 Hz from $T3/4 > C3/4$ and/or $Fp1/2 > F3/4 > C3/4$ and/or $O1/2 > P3/4$. Drowsiness occurs when the locus coeruleus reduces inhibition on the hypothalamic sleep centers resulting in 2 - 4 Hz action potential bursting that projects to the ventral posterior thalamic relay nuclei. Drowsiness pattern detection involves elevated slow waves in the EEG maximal in Cz and Fz as well as alpha slowing. NeuroGuide does not use any regression methods to allegedly remove artifact such as ICA/PCA or Blind Source or unpublished methods like SARA that distort Phase and Coherence and other aspects of the Power Spectrum. Details and tutorials demonstrating how the ICA and regression methods distort Phase and Coherence are available at: https://www.appliedneuroscience.com/PDFs/Tutorial_Adulteration_Phase_Relations_when_using_ICA.pdf.

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Split Half and Test Re-Test Reliability:

Split-Half (SH) reliability is the ratio of variance between the even and odd seconds of the time series of selected digital EEG (variance = sum of the square of the deviation of each time point from the mean of the time points). Examine the average reliability and the reliability of each channel as you increase the length of the sample and manually select different segments. Selection of artifact free EEG should have a reliability > 0.95 and a sample length of edited EEG > 60 seconds. Test Re-Test (TRT) reliability is the ratio of variance between the first half vs. the second half of the selected EEG segments (variance = sum of the square of the deviation of each time point from the mean of the time points). Test Re-Test reliability > 0.90 and a sample length of edited EEG > 60 seconds is commonly published in the scientific literature. Test Re-Test reliability is an excellent statistic to compare Brain state changes such as drowsiness as well as the consistency of a measure independent of changes in brain state.

Description of the NeuroGuide Normative Database:

The NeuroGuide normative database in versions 1.0 to 2.4.6 included a total of 678 carefully screened individual subjects ranging in age from 2 months to 82 years. NG 2.6.8 involved the addition of 49 adult subjects ranging in age from 18.3 years to 72.6 years resulting in a normative database of 727 subjects. The inclusion/exclusion criteria, demographics, neuropsychological tests, Gaussian distribution tests and cross-validation tests are described in several peer reviewed publications (Thatcher et al, 1983; 1987; 2003). Two year means were computed using a sliding average with 6 month overlap of subjects. This produced a stable and higher age resolution normative database with a total of 21 different age groups. The 21 age groups and age ranges and number of subjects per age group is shown in the bar graph in Appendix F figure 2 in the NeuroGuide Manual (click Help > NeuroGuide Help).

The individuals used to create the normative database met specific clinical standards of no history of neurological disorders, no history of behavioral disorders, performed at grade level in school, etc. Most of the subjects in the normative database were given extensive neuropsychological tests. Details of the normative database are published at: Thatcher, R.W., Walker, R.A. and Guidice, S. Human cerebral hemispheres develop at different rates and ages. *Science*, 236: 1110-1113, 1987 and Thatcher R.W., Biver, C.L., North, D., Curtin, R. and Walker, R.W. Quantitative EEG Normative Databases: Validation and Clinical Correlation. *Journal of Neurotherapy*, 2003, 7(3-4): 87-121. You can download a description of the normative database by going to www.appliedneuroscience.com and clicking on the webpage Articles & Links > Articles > Article #5.

Is there a normative database for different montages including bipolar montages?

Yes. The raw digital data from the same group of normal subjects is analyzed using different montages such as Average Reference, Laplacian current source density, a common reference based on all 19 channels of the 10/20 system and standard clinical bipolar montages (e.g., longitudinal, circular, transverse). Users can create any montage that they wish and there will be a normative reference database comparison available for both eyes closed and eyes open conditions.

Age range of the LORETA Current Density and Source Correlation Normative Databases

The LORETA current density and source correlation norms use the same subjects as are used for the surface EEG norms and the age range is 2 months to 82 years. The computational details of the LORETA current density norms are published at: Thatcher, R.W., North, D., Biver, C. EEG inverse solutions and parametric vs. non-parametric statistics of Low Resolution Electromagnetic Tomography (LORETA). *Clin. EEG and Neuroscience*, 36(1): 1-9, 2005 and Thatcher, R.W., North, D., Biver, C. Evaluation and Validity of a LORETA normative EEG database. *Clin. EEG and Neuroscience*, 2005, 36(2): 116-122. Copies of these publications are available to download from www.appliedneuroscience.com by clicking Articles & Links > Articles > Numbers 11 and 12. The computational details of the LORETA source correlation norms are in the NeuroGuide Manual, click Help > NeuroGuide Help > Appendix-G.

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Implementation of LORETA measurement in NeuroGuide

The Key Institute's LORETA equations and the LORETA viewer (Pascual-Marqui et al, 1994; Pascual-Marqui, 1999) can be launched by a single mouse click in the NeuroGuide window. NeuroGuide exports frequency domain and time domain edits of 19 channel x 256 point digital EEG in microvolts (or μV) in the Lexicor electrode order as the standard input to the Key Institute T-Matrix. Rows are 256 microvolt time points and the columns are 19 channels at a sample rate of 128 thus producing 0.5 Hz resolution from 1 to 30 Hz. 1 Hz increments in the LORETA viewer are computed as the sum of adjacent 0.5 Hz bins and thus the 'Time Frame' control in the LORETA Viewer is frequency from 1 to 30 Hz. (see Pascual-Marqui RD, Michel CM, Lehmann D., 1994. Low resolution electromagnetic tomography: a new method for localizing electrical activity in the brain. *International J. of Psychophysiology*, 18:49-65. For computational details see: Pascual-Marqui. R.D., 1999. Review of Methods for Solving the EEG Inverse Problem. *International J. of Bioelectromagnetism*, 1(1): 75-86. Pascual-Marqui, R.D., 2004. The Key Institute's free software and documentation was downloaded from www.unizh.ch/keyinst/NewLORETA/Software/Software.htm.)

Amplifier Matching is Necessary

This stems from the fact that amplifiers have different frequency gain characteristics. The matching of amplifiers to the NeuroGuide database amplifier was done by injecting microvolt calibration signals of different amplitudes and frequencies into the input of the respective EEG machines and then computing correction curves to exactly match the amplifier characteristics of the norms and discriminant functions. The units of comparison are in microvolts and a match within 3% is generally achieved. The NeuroGuide research team double checked the amplifier match by computing FFT and digital spectral analyses on calibration signals used to acquire the norms with the calibration signals used to evaluate a given manufacturers amplifiers.

History of the Scientific Standards of QEEG Normative Databases

A review of the history of QEEG normative databases was published in Thatcher, R.W. and Lubar, J.F. History of the scientific standards of QEEG normative databases. In: *Introduction to QEEG and Neurofeedback: Advanced Theory and Applications*, T. Budzinsky, H. Budzinsky, J. Evans and A. Abarbanel (eds), Academic Press, San Diego, CA, 2008. A copy of the publication can be downloaded at: https://www.appliedneuroscience.com/PDFs/History_of_QEEG_Databases.pdf.

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